

May 27, 2021

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Town of Sturbridge
301 Main Street, 1st Floor
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**RE: Pare Corporation 1/14/21 Peer Review Response Letter
Definitive Subdivision – 30 Main Street & 20 Fiske Hill Road, Sturbridge, MA
Fiske Hill East Realty Trust**

Dear Planning Board and Conservation Members:

McClure Engineering, Inc. (McClure) is in receipt of the following comments from Pare Corporation (Pare) date January 14, 2021 relating to “Fiske Hill East” - 30 Main street & 20 Fiske Hill Road, Sturbridge, MA. We are providing the following technical responses to each comment:

Traffic Impact Study, dated August 2020:

The project consists of the development of a parcel of land consisting of five lots totaling 134+/- acres to construct a multi-use development.

1. *Project Description-* There is a description of the access to driveways, parking, and garages, the 40' ROW and 20' paved road? It appears this description is from the previous study for the site.

McClure Response: The portion of the description which describes driveway, parking, garages, 40' ROW, and 20' paved road is related to the future potential Senior Housing Community Development of Lot 3.

2. *Project Description-* States emergency egress/access is proposed through an existing access easement granted from Southbridge. Please clarify-other documentation states “the roadway is not proposed to loop out to Fiske Hill Road in an effort to protect the historic and scenic qualities of Fiske Hill Road, even though by doing so it would eliminate the need for a waiver for the proposed length...” No other documents indicate emergency access/egress although it should be considered/discussed. Please clarify.

McClure Response: Emergency egress/access will be proposed through the future Senior Housing Community development of Lot 3, which would provide emergency access via a gated 12' wide gravel access road to Idlewood Street in Southbridge. This access will need to be approved by the Sturbridge and Southbridge Planning Boards during the permitting phase of Lot 3.

3. *Figure 1-* Please revise title for the figure.

McClure Response: The title for Figure 1 has been revised in the report.

4. *Study Area Roadway Network* – Applicant has stated that the study area was determined in consultation with the MassDOT District 3 Traffic Engineer.

McClure Response: The study area was determined through consultation with the MassDOT District 3 Traffic Engineer during the original Traffic Study in 2007. The same study area was used in the updated Study. Permitting through MassDOT is ongoing.

5. *Traffic Volumes*- Due to COVID-19 pandemic, counts from 2007 were used. MassDOT Growth rates were used to expand traffic to 2020 conditions. The growth rates used were the Average Annual Growth Rate factor provided by MassDOT Data Management System. The average growth rate based on the method is .0034/year or 0.0442 over a 13-year period.

The applicant also provided counts from a nearby count station for the years 2013 to 2019. The yearly fluctuations in those volumes are:

- 2013-2104 +.055/year
- 2014-2015 +.11/year
- 2015-2016 +.0244/year
- 2016-2017 +.011/year
- 2017-2018 -.004/year
- 2018-2019 --.08/year

It appears that these numbers are very inconsistent. If you average the volumes a 0.0029/year factor is calculated, which is close to the Annual growth factor being used. The factor adjustment is acceptable.

Also, seasonal factors were also applied that are in conformance with MassDOT standards and are acceptable.

Truck percentages were provided from the count station. Were trucks counted as part of the applicants turning movement counts for comparison. Can actual count data performed by applicant be provided with the report.

McClure Response: Acknowledged. Truck percentages were provided from the count station because the latest MassDOT truck percentage rates are the most reliable rates compared to those collected in the original traffic study in 2007. Updated counts were not conducted due to the COVID-19 Pandemic and associated affected traffic counts.

6. *Sight distances* – Sight distances are typically based on a speed study and the 85th percentile speed. The applicant uses the posted speed limit. Based on the sight distances available at the proposed driveway, even using the 85th percentile speed, the sight line measurements will exceed the design speed.

McClure Response: Acknowledged. Based on the 85th percentile speed (42 mph per MassDOT traffic count location #3989) instead of the posted speed limit (35 mph), the required stopping sight distance would be 305'+/-. The sight distances in both directions of Main Street exceed the required stopping sight distance.

7. *Accidents*- Crash data was obtained from the MassDOT Crash Data Base. Based on the number of crashes summarized in the analysis, there does not appear to be a history of crashes at the Main Street/Fisk Hill Road intersection or the Main Street/Wallace Road intersection.

McClure Response: Acknowledged, no comment necessary.

8. Site Generated Traffic – Trips were generated using the ITE Trip Generation Manual 10th edition. The land uses and the trips projected for the daily trips, the weekday a.m. peak and p.m. peak and Saturday peak, appear accurate. All three peak periods were evaluated.

McClure Response: Acknowledged, no comment necessary.

9. Trip Distribution and Assignment- The trip distribution was based on existing traffic patterns. The distribution of traffic provided in Figure 3 is accurate.

McClure Response: Acknowledged, no comment necessary.

10. Site Access and Circulation – The proposed roadway width is 24 feet with a 50-foot right-of-way. Based on the descriptions within the Subdivision Regulations, the roadway should be classified as a Major Street and the right-of-way width should be 60 feet and the roadway pavement width should be 32 feet. The narrower right-of-way and travel way is allowed if it is determined that the result will be the preservation of trees and other vegetation and will be consistent with the location and character of the subdivision. The applicant is requesting a waiver to preserve vegetation and minimize the total proposed impervious area on site, both of which make for less surface water runoff and encourages a less intrusive stormwater management system design. Based on the number of trips proposed to generated, the speeds of vehicles anticipated and the restrictions of any parking on the road, Pare is in agreement with the 24 foot width. With this width, however, and the proposed uses, the addition of an emergency access road should be discussed and considered to be included in the design.

It is stated that the access driveways pavement width is 20'. Where is this on plans? Stated that each unit will have off-street parking for two vehicles which will eliminate on-street parking. Emergency access/egress is described again. Is this confirmed. Please clarify?

McClure Response: The portion of the description which describes driveway, parking, garages, 40' ROW, and 20' paved road is related to the future potential Senior Housing Community Development of Lot 3. Emergency egress/access will be proposed through the future Senior Housing Community development of Lot 3, which would provide emergency access via a gated 12' wide gravel access road to Idlewood Street in Southbridge. This access will need to be approved by the Sturbridge and Southbridge Planning Boards during the permitting phase of Lot 3. The road width has been revised to 28' as requested by the Planning Board. The right-of-way width has been increased to 52' as to allow for 12" of buffer between the back of the proposed sidewalk and the edge of the right-of-way.

11. Traffic Operations- Applicant reviewed existing (2020) conditions and Future (2027) No-build and Build conditions.

Did the applicant consider any future development in the adjoining Town that may impact the volumes?

McClure Response: Future developments in both Sturbridge and Southbridge were considered in the future traffic volumes.

Revise Table 4. Some of the column headers should be revised for example Existing Conditions Saturday Peak should be 'SB' not '0.04' and Main Street at Wallace Road for No-Build and Build conditions should

be ‘NB’ not ‘SB’. For the Main Street at Fiske Hill Road Saturday Peak No-Build Condition the Southbound Movement should be LOS B not LOS C.

McClure Response: The report has been revised as indicated.

For Future No-Build Conditions, a couple of the movements (Main Street at Fisk Hill Road Saturday Peak Southbound Movement reduced from LOB B to LOS C and Main Street at Wallace Road PM Peak and Saturday Peak reduce from LOS C to LOS D). Even with the reduction, the LOS D is still considered acceptable and the increase in delays is minor.

McClure Response: Acknowledged, no comment necessary.

When comparing the No Build 2027 to the Build 2027, the only reduction in LOS is for the Main Street at Fiske Hill Road Saturday Peak Southbound movement which reduces from LOS B to LOS C. As stated above, LOS C is still an acceptable LOS.

McClure Response: Acknowledged, no comment necessary.

Please review Figure 5. The traffic volume heading southbound at the Fiske Hill Road/Main Street intersection is 639 vehicles per hour (94+545), while at the proposed site entrance the volume is reduced to 570 vph (489+81). That is a reduction is 69 vehicles per hour (11% of the volume) - please justify. Likewise, northbound, just north of site, the volumes are 430 vph but at the Fisk Hill Road/Main Street intersection the northbound approach has 497 vph (13%). Please review all of these volumes and the analysis.

McClure Response: There are a number of businesses along the stretch of Main Street between the proposed subdivision roadway and Wallace Road. The discrepancy in the traffic volumes are the result of motorists entering and exiting these businesses.

The results of the analysis provided for the proposed site roadway with 2 lanes indicates that the intersection operates at LOS C during the AM Peak Hour, and LOS D during the PM and Saturday Peak Hour. With the two lanes exiting and the sight distance, the intersection should operate satisfactorily. Please verify after reviewing and responding to previous comment that the numbers and the analysis is accurate.

McClure Response: The numbers and analysis were reviewed and are accurate, however the road design has been revised to a single southbound lane at the intersection with Main Street after consultation with MassDOT. Per discussion with Eric Nascimento, Operations Engineer for MassDOT District 3, the District will only allow for a single lane from the site as there are concerns that the additional lane could restrict the sight distance if there is a vehicle queued in the both lanes. Discussion was also held regarding staggering the stop lines of the two lanes, however DOT feels that staggering the stop lines of the two lanes would actually make the sight distance much worse for vehicles turning left out of the site. MassDOT indicated that the traffic analysis provided to them indicates the intersection will operate at an acceptable level with a single lane exit, with a maximum queue length of 72’ on the driveway approach, which is typical for a non-signalized intersection. Correspondence with MassDOT is attached.

MassDOT also requested that left-turn lane warrants be looked at for the roadway from Main Street. Traffic counts indicated in Figure 5 exceed the left-turn lane warrants of the MassDOT Project Development and Design Guide. Through consultation with MassDOT, a left turn lane into the site has

been incorporated into the revised design plans. This will require a slight pavement widening along the frontage of the subject property, as well as striping improvements within the roadway.

6. *Findings:* The applicant states that the intersection of Main Street and the driveway will operate at LOS 'B' with two lanes exiting. The analysis indicates that the intersection will operate at LOS C during the AM Peak, LOS D during the PM Peak and LOS D during the Saturday Peak. Please verify.

McClure Response: Clarification, all approaches of the intersection would operate at a LOS B with two lanes exiting. The intersection as a whole would operate at a LOS of C, D, D as indicated above. With the removal of the second exit lane, the intersection will operate at a LOS of AM C, PM E, Saturday D which still indicates an acceptable LOS.

7. *Conclusions and Recommendations:* Pare is in agreement that vegetation and no addition of any features such as signage or landscaping should be installed at the site driveway that would impact the sight lines. Pare is in agreement that a two-lane exit should be implemented to improve the LOS at the intersection. The applicant should review striping on Main Street in the area of the proposed site driveway and modify as necessary.

McClure Response: Acknowledged. As discussed above, in coordination with MassDOT through the Access Permit Application, the second exit lane has been removed from the design as they will only accept a single exit lane. Correspondence with MassDOT is attached. The addition of a left-turn lane on Main Street will require a slight pavement widening along the frontage of the subject property, as well as striping improvements within the roadway. Permitting with MassDOT is still ongoing, however the design as provided on the revised plan set has been agreed to through discussion. Landscaping at the intersection has been minimized.

Stormwater Management Report

1. *Introduction-* The applicant does a good job with the Scope of Analysis, the Site Description, and the Proposed Conditions.

McClure Response: Acknowledged, no comment necessary.

2. *Hydrologic Analysis* – The information and analyses performed pertaining to this section are complete. The results of the analyses indicates a decrease in post peak rate runoff at all five analysis points for the 2, 10, 25 and 100-year, 24-hour storm event.

McClure Response: Acknowledged, no comment necessary.

3. *Stormwater Standards* –

- *Standard 1 - Computations to Show that Discharge Does not Cause Scour or Erosion-* Met. Velocities at outfalls are within acceptable range to prevent scour. Riprap pads are provided at outfalls. Please provide a detail on plans for the pads detailing size of pad and stone size.

McClure Response: Acknowledged, no comment necessary.

- *Standard 2 - Peak Rate Attenuation* – Met. Post-development discharge rates do not exceed pre-development peak discharge rates.

McClure Response: Acknowledged, no comment necessary.

- *Standard 3 – Recharge*- This standard is met with the proposed basin. Please review and see if any additional recharge could be provided for the drainage system closest to the entrance.

McClure Response: Acknowledged, no comment necessary.

- *Standard 4 – Water Quality*- Met. The applicant has met this standard based on the water quality volume analysis, the TSS removal calculations and the proposed “Long Term Operation and Maintenance Plan provided.

McClure Response: Acknowledged, no comment necessary.

- *Standard 5 – Land Uses with Higher Pollutant Loads* - NA. Pare agrees that the proposed land use is not a High Potential Pollutant Load development.

McClure Response: Acknowledged, no comment necessary.

- *Standard 6 – Critical Areas*- NA. Pare agrees that this development will not discharge to a Zone II or Interim Wellhead Protection Area of a public water supply and storm water will not discharge to any other critical area.

McClure Response: Acknowledged, no comment necessary.

- *Standard 7 – Redevelopment* - Pare is in concurrence that the site is not considered a redevelopment and that all of the pertinent standards will be met.

McClure Response: Acknowledged, no comment necessary.

- *Standard 8 – Construction Period Controls*- Met. A plan for inspections, the need for an EPA- NPDES Stormwater General Permit and an Erosion and Sediment Control Plan have been provided or identifies and are found to be acceptable.

McClure Response: Acknowledged, no comment necessary.

- *Standard 9- Operations and Maintenance Plan*- Met. A plan has been provided along with an O&M Compliance Statement and Inspection & Maintenance Reports. All are acceptable.

McClure Response: Acknowledged, no comment necessary.

- *Standard 10- Illicit Discharges to Drainage System* – Met. This standard is addressed in the O&M Plan.

McClure Response: Acknowledged, no comment necessary.

Miscellaneous Comments

1. Please review the location of the basin and see if it can be redesigned or reconfigured so it does not encroach into the wetland buffer area.

McClure Response: The basin has been revised and redesigned to encroach as little as possible on the wetlands and their respective buffer zones. A small rain garden has been added for additional water quality treatment per the request of the Conservation Agent.

2. Have areas been identified for temporary stockpiles, spoil areas, temporary drainage.

McClure Response: Areas for temporary stockpiles, spoil areas, and drainage are shown on Sheet C-6.

3. Cul-de-sac is proposed to be 1,030 linear feet and it is stated that it is necessary to create frontage within the Rural district. The 1,030 foot cul-de-sac will require a waiver from the 500 foot length allowed. It is understood that this waiver has been approved for other subdivisions in Town. Based on the proposed uses, this length is not considered an issue if an emergency access is provided for the Senior Housing Community from Crestwood Drive in Southbridge.

McClure Response: Acknowledged. A Waiver for the roadway length has been approved, conditioned that an emergency access be provided through Southbridge as part of the development of Lot 3.

4. Has the Water Department weighed in on the extension of the water main and the dead-end being proposed?

McClure Response: The Water Department originally indicated that a dead end with a hydrant was acceptable, however after further deliberation, they have decided they would like the line looped though to Fiske Hill Road. The plans have been revised to show the water line extension and easement. The tie in location on Fiske Hill Road (between 16 Fiske Hill Road and 18 Fiske Hill Road) will need to be triple gated.

5. Applicant has provided a 3/16 inch per foot cross-slope for the sidewalks. The subdivision regulations call for a 3/8 inch per foot cross slope. Based on ADA requirements, the plans as shown are acceptable.

McClure Response: The cross-slope of the sidewalks has been revised to 3/8" per foot to match the subdivision regulations.

6. Curbing being provided is bituminous concrete. Has this been reviewed and approved by the Department of Public Works?

McClure Response: The DPW requested that Cape Cod Berms be proposed. The plans have been revised. MassDOT is requiring vertical granite curbing along the radius into the property as well as the entire frontage of the property as sidewalks have been extended in this area at their request.

7. Per the regulations, if only one sidewalk is to be installed, hydrants should be on the opposite side of the street. There are three hydrants being installed. The middle one is in an area where there is only one sidewalk. The other hydrants are proposed on the same side as the middle one. This location should be confirmed with the Water Department.

McClure Response: The plans have been revised to indicate sidewalks on both sides of the roadway. The hydrants were located as to not need to cross the sewer lines and to be on the opposite side of the roadway than the underground electric.

8. On the Typical Water Main Trench Section, the bed is labelled as 6 inches. Subdivision regulations require 12 inches.

McClure Response: The Water Main Trench Section Detail has been revised to provide a 12" bed.

9. Is there a reason as to why the sidewalks are not continued along both sides of the roadways? With proposed uses in the development, it may be advantageous to continue them on both sides to eliminate road crossings.

McClure Response: The plans have been revised to indicate sidewalks on both sides of the roadway and the roadway crossings have been removed.

10. Subdivision regulations (Section 13, A. 2) state that the sidewalks in commercial and industrial areas are to be 6 feet wide. Four-foot sidewalks are proposed. A waiver should be requested for this.

McClure Response: Sidewalks are proposed as 6' wide.

11. Four-by-four-inch welded wire mesh or equal is to be installed at driveways. Plans call for 6x6xW3xW3.

McClure Response: The sidewalk detail has been revised to indicate 4"x4" welded wire mesh at driveways.

12. Waivers:

Applicant is requesting the following waivers:

- The plan should show individual trees of 10-inch diameter or greater within 50 feet of the proposed right-of-way. There are many trees greater than 10" which would make difficult to identify on the plans. The applicant has stated that they have tried to minimize impacting vegetation and have supplemented areas where trees are being removed with new vegetation. Pare concurs with this request.
- Scale of Index Sheet is acceptable to Pare.
- Centerline radius (175') is less than what is required (200'). Pare takes no exception with layout.
- Right-of-way width and roadway width are described above.
- Cul-de-sac length is described above.
- Pipe cover on drainage pipes at CB1 and CB2 in the vicinity of Main Street are 24" where 36" is required. This was done to capture runoff from going to Main Street. Because of grades we find this request acceptable.
- Proposed water line is 6". This matches existing water line on Main Street.
- Sidewalks are discussed above.

McClure Response: Acknowledged. All waivers were approved, with the exception of the 24' wide pavement width, at the 1/16/21 planning board hearing. A pavement width waiver was approved for 28'. The center line radius of the proposed roadway has also been revised to 200', and the waiver for a 175' radius is no longer necessary. The plans have been revised as noted.

A copy of the revised “**Fiske Hill East**” - 30 Main street & 20 Fiske Hill Road, Sturbridge, MA revise date **5/28/21**, is enclosed for your review.

Please call me with any questions or comments at (508) 248-2005.

Sincerely,

A handwritten signature in black ink, appearing to read 'Peter C. Engle', written in a cursive style.

Peter C. Engle, P.E.
Senior Engineer

Attachments

cc: John P. Shelvin, P.E., Pare Corporation, 10 Lincoln Road, Suite 210, Foxboro, MA 02035
Matt Sosik, Fiske Hill East Realty, 97 Arnold Road, Fiskdale, MA 01518

Peter Engle

From: Nascimento, Eric (DOT) <Eric.Nascimento@dot.state.ma.us>
Sent: Wednesday, May 12, 2021 1:17 PM
To: Peter Engle
Cc: Lisa Westwell
Subject: RE: Fiske Hill East

Hi Peter,

I talked with our traffic engineer and our assistant project engineer about the number of lanes exiting the site driveway and they are both in agreement that the District would only allow a single exit lane from the site driveway. We all have concerns that the additional lane could potentially restrict the sight distance if there is a vehicle in both lanes. As you mention, staggering the stop lines would make the sight distance much worse for vehicles turning left from the site driveway. Also, the traffic analysis submitted with the permit shows the intersection will operate at acceptable level of service with a single lane exit, with maximum queue lengths of 72 feet on the driveway approach, which is about 3 cars, which is typical for an unsignalized intersection/driveway. Thanks.

-Eric